

Declining Tuber Moth Numbers Encouraging



Tuber moth damage. Photo courtesy of Mark Pavlek.

There's good news as far as tuberworm risk for Columbia Basin potato fields this year, according to Silvia Rondon and Andy Jensen, who have been tracking moth numbers over the past few years. Trap numbers are down, and down substantially.

"Compared to previous years, the number we're seeing in Umatilla and Morrow counties in Oregon – the area in which I serve – are really down," Rondon reports. "We're in our fourth week of trapping (mid-June) now, and have been averaging just one moth per trap per week."

On the Washington side of the river, Jensen says his traps south of Pasco are picking up a moth or two here and there and even less north of Basin City. Tuber moth numbers are very light, he observes.

Rondon is an extension entomologist with Oregon State University's Hermiston Agricultural Research and Extension Center, Hermiston, Ore., while Jensen is director of research for the Washington State Potato Commission, Moses Lake, Wash.

Problems with potato tuberworm (*Phthorimaea operculella*) first began surfacing in 2002 in the Hermiston area. Numbers were extremely worrisome in 2003, 2004 and 2005, and then dropped off substantially in 2006, Rondon points out.

On the Washington side, Jensen began trapping tuber moth in 2004, when the pest first became worrisome in the Pasco area. Both 2004 and 2005 saw elevated numbers in most of the state's production areas and substantial tuberworm damage.

Factors influencing infestations include warm, dry weather in the summer; mild winters; increased tuber exposure, i.e., from shallow setting or soil cracking; improper sanitation; length of time the tubers remain in the ground after vine kill; contaminated seed; and dry soil (drought, ending irrigation).

Why the significant decline in tuber moth numbers in 2006 and 2007? "A combination of factors may be involved," Rondon points out, "but it's difficult to identify the specific reasons. One likely contributing factor is colder winter-time temperatures. This past winter, for example, in our neck of the woods, we had at least three weeks of temperatures below the freezing point."

While in full agreement, Jensen notes that it is not so much how cold the temperatures are during the winter but how much snow, or the lack thereof, is on the ground when the cooler weather hits.

"During both winters (2006 and 2007), we had periods of cold weather without snow on the ground," he points out. "That killed off most of the tubers left in the ground after harvest that normally would have become volunteers and sources of infestation. Hence, we've had very low volunteer potato pressure this spring, and without that, the food supply was insufficient for the moths to get off to a good start."

Is the tuberworm worry in the past? Can growers now relax, at least for this season?

There is no clear answer, both researchers warn. While reduced moth numbers are good news for growers, the situation could change, Rondon cautions, adding that "We need to have our tools ready to roll should an unexpected outbreak occur."

"Tuberworms are likely to be one of those problems that pop up every now and then," Jensen warns. "We don't understand all of the factors that contribute to an outbreak, even though hot weather during the summer and warm temperatures during the winter are definite factors. We do know that moth populations are highest in the late summer and fall, so, depending upon how things go, a warm fall could trigger another outbreak. It's too early to predict, yet."

Meanwhile, Rondon and Jensen are not recommending routine spraying unless trap numbers suggest a reason. Regular trap monitoring, especially as the fall harvest approaches, is advised. Should trap numbers change substantially, a pesticide application before harvest would be well advised.

Jensen recommends that growers set up traps bordering each of their potato fields. Past experience shows that hot spot infestations can show up here and there. A trap on one corner of the farm may not be a good indicator of what is going on in a field five miles away.

Both Oregon State University and the Washington State Potato Commission post their trapping numbers on the Web. In Oregon, check: www.oregonstate.edu/dept/hermiston; in Washington, the site is: www.potatoes.com/research.cfm.



Tuber moth photo courtesy WSU.

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